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Implementation of the proposal for action of the Intergovernmental Panel on Forests/Intergovernmental Forum on Forests and the plan of action of the United Nations Forum on Forests: progress in implementation

Social and cultural aspects of forests

Report of the Secretary-General

Summary

The present report provides an assessment of the status of implementation of the Intergovernmental Panel on Forests (IPF)/Intergovernmental Forum on Forests (IFF) proposals for action related to social and cultural aspects of forests. The report shows that there has been a notable shift in national forestry policies in most member countries towards more people-oriented forestry. The fundamental problem is the limited scope of the IPF/IFF proposals with respect to social and cultural aspects. The social and cultural aspects of forests need to be placed into a wider context to prevent the further marginalization of forest issues in the global agenda. Reluctance to devolve control over resources to local communities, coupled with an inadequate understanding of devolution mechanisms, as well as lack of financial and human resources, were cited as some of the biggest obstacles to pro-poor forestry initiatives.

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I. Introduction

1. The fourth session of the United Nations Forum on Forests will review the implementation of proposals for action of the Intergovernmental Panel on Forests (IPF) and Intergovernmental Forum on Forests (IFF) related to social and cultural aspects of forests. The draft of the present report was prepared for the Forum by the Centre for International Forestry Research, in consultation with other member organizations of the Collaborative Partnership on Forests, to facilitate those discussions. The report provides an assessment of the status of implementation of the relevant IPF/IFF proposals for action, discussion of the means of implementation (finance, transfer of environmentally sound technologies and capacity-building) and discussion of common items of the Forum[1] related to social and cultural aspects of forests.

2. Despite its significant potential, the forest sector has typically contributed very little to the global discussion about social and economic development. Forests provide fully or in part subsistence for one fourth of the world's poor and any actions towards increasing the earnings from forests will likely provide benefits to the rural poor living in or near forest-abundant areas. Thus, increasing and establishing access to the resource and defining stable, transferable ownership rights will help poor people to diversify their livelihood strategies and, in many cases, will encourage sustainable use of the resource. The Millennium Development Goals of poverty reduction and ensuring environmental sustainability therefore hinge on sustainable management of forests, since this is a component of achieving overall environmental stability and sustained economic growth.

3. The World Summit on Sustainable Development held in Johannesburg, South Africa from 26 August to 4 September 2002 addressed and emphasized, among many other important issues, the role of sustainable forest management in overall sustainable development and, more specifically, in poverty eradication, improvement in food security, and access to safe drinking water and affordable energy. The proposed actions emphasize the role of institution-building, and partnerships among stakeholders, including Governments and the private sector, indigenous and local communities and non-governmental organizations, in moving towards sustainable forest management. The Summit called for enhanced political commitment to achieving sustainable forest management, by endorsing it as a priority in the international political agenda, taking full account of the linkages between the forest sector and other sectors through integrated approaches.[2]

4. The twelfth World Forestry Congress, held in Québec City, Canada, from 21 to 28 September 2003, highlighted the major theme of "forests for people". The Congress underlined the fact that there is a lack of understanding of the role of forests in poverty eradication. It presented recommendations for addressing poverty and sustaining livelihoods, placing people at the centre of forest management and enabling people to manage forests sustainably. It also provided other relevant recommendations on education and the role of youth; working conditions, safety, rights and remuneration of forestry workers; the contribution of trees outside forests and their importance to urban communities; women in the forestry profession; and economic and social inequalities, overconsumption of the rich and the quest of the poor to meet their basic needs.

5. The challenge, then, is to link firmly the IPF/IFF proposals to the broader development agenda. There is a need to demonstrate intersectoral linkages and to look at issues in the context of the United Nations Millennium Declaration adopted by the Heads of State at the Millennium Summit in 2000.

6. National reports submitted to the United Nations Forum on Forests at its fourth session, findings from various country and organization-led initiatives and general literature were used in compiling the present report. Contributions from members of the Collaborative Partnership on Forests were also important in broadening the focus of the report.

II. Background

7. Until relatively recently, forestry in many parts of the world largely took the form of top-down government programmes and projects that centred on the introduction of new technologies. Frequently, especially in developing countries, this involved establishing village woodlots, planting fast-growing species and demarcation of protected forest areas where local people were often excluded. Indigenous species, local agroforestry systems and traditional resource management practices, as well as institutions for communal forest stewardship, were often ignored. Typically, decisions about forest management were often taken in centralized government offices, far from the people affected by changes in forest management.

8. It is noted that only a few national forest programmes devote a substantial portion of resources to issues such as poverty, decent work, and the role of women, youth and indigenous people, although the issues have recently been receiving more attention in forest policy processes. As a result, forests' contribution to the well-being of the poor, the forest workforce, women, youth and indigenous peoples are neither well-defined nor documented.

9. Nevertheless, in the past decades, some social issues, and particularly the need for communities to assume more active roles in resource management, have come to the fore. Social forestry emerged, challenging conventional management regimes that relied on the authority of the State to hold unilateral power over management decision-making. With increasing pressures on forest resources and fiscal constraints on government forest agencies, it is now clear that many Governments in developing countries are no longer able to manage and protect public forestlands on their own. Forest-dependent communities are often the best positioned logistically to develop and impose the intensified use controls needed to sustain forest ecosystems. At the same time, worldwide trends towards democratization and decentralization have put the spotlight on communities' demands to play a central role in forest management. With the rising level of education and access to information in most parts of the world, people are demanding more responsibilities and rights over the natural resources upon which they depend. While conventional management approaches emphasized exclusion and marginalization of local communities and indigenous people in forest programmes, current approaches now centre on active involvement of forest-dependent communities and incorporation of local people's social and cultural concerns in decision-making on all aspects of forest management.

10. Governments worldwide are beginning to recognize the legitimate rights of forest-dependent people, ancestral domain claims and the opportunities that community involvement presents in helping to sustain natural forest ecosystems and increasing forest cover. The motives for these moves towards decentralization vary, but most Governments hope that the process will help to reduce bureaucracy, make decision-making more democratic, distribute the benefits derived from exploiting resources more fairly and make their use and exploitation more efficient.

11. While there is an observable worldwide shift to policies and programmes that are supportive of community involvement and decentralization in forest management, the challenge has often been how this transition should take place. Critical to this transition is the establishment of adaptive institutional arrangements, policies and programmes to facilitate devolution of greater authority to forest-dependent communities, while supporting new partnerships among communities, Governments and the private sector. In practice, community involvement would have to move beyond "invited" participation, which frequently means an invitation to comply with preset objectives within the framework of debates that obscure the experiences, perspectives and political and material interests of the poorest forest users.

12. Through strengthened participation, not just in policy but also in science, poorer forest users can genuinely shape agendas for the management, conservation and sustainable development of all types of forests. This could take the form of participatory research strategies and deliberative procedures in which poorer forest users help to set agendas and questions, allowing perspectives from local settings to feed upwards into and shape the terms of policy debate. Such procedures would need to promote aspects of a political and legal culture that enables critique, builds people's confidence and skills and makes space for people's own perspectives, knowledge and interests to inform policy debates.

13. The key IPF/IFF proposals for action related to social and cultural aspects of forests have been grouped into three types of action (see table below): fair and equitable sharing of the benefits arising from the utilization of forest genetic resources; the role of women in sustainable forest management; and the enhanced role of indigenous and local communities in sustainable forest management.

14. Other proposals for action relevant to the social and cultural aspects of forests that have been reported upon at previous United Nations Forum on Forests sessions and that will not be covered in the present report include those falling under: combating deforestation and forest degradation;[3] forest conservation and protection of unique types of forests and fragile ecosystems;[4] rehabilitation and restoration of degraded lands and promotion of natural and planted forests, all of which were covered at the second session of the Forum;[5] and economic aspects of forests, covered at the third session of the Forum.[6] It should be noted that the issues on economic aspects of forests, such as those related to public goods aspects of forests, responsible private sector and well-defined property rights, addressed in the report are equally relevant to the scope of the present report. Proposals for action of relevance to social and cultural aspects of forests that will be addressed in other reports of the Secretary-General at the fourth session of the Forum include: those regarding traditional forest-related knowledge,[7] as well as proposals related to monitoring assessment and reporting.[8]

III. Implementation of the Intergovernmental Panel on Forests/Intergovernmental Forum on Forests proposals for action

15. Progress on implementation of the IPF/IFF proposals for action and lessons learned are discussed in section III.A. Emerging issues are discussed in section III.B. These are internationally significant issues that are related to the work of the United Nations Forum on Forests, which have not been addressed by the IPF/IFF proposals for action. The means of implementation are discussed in section III.C. Three relevant common items, as identified in the Forum's multi-year programme of work (see table), are discussed in section III.D.

A. Progress on implementation and emerging issues

1. Fair and equitable sharing of the benefits arising from the utilization of forest genetic resources

16. Many countries with developing economies and limited scientific infrastructure have not been able to engage fully in and benefit from the rapid scientific and technological advances that make new and varied use of genetic resources. At the same time, many companies and research institutions in developed countries seek novelty in the genetic resources they study and use and many look outside their borders for new leads. The great abundance of forest genetic resources in tropical forests remains valuable in the development of new products and many companies continue to seek access to those materials. Current collection activities and disposition of existing ex-situ collections have raised fears of biopiracy, as most countries lacked the appropriate policy and legal instruments to ensure prior informed consent and equitable benefit sharing.

Table
Summary of Intergovernmental Panel on Forests/Intergovernmental Forum on Forests proposals for action related to social and cultural aspects of forests

Characteristics of the IPF/IFF proposals for action		*Proposal(s) for action*
Type of action called for	**Fair and equitable sharing of the benefits arising from the utilization of forest genetic resources** – Promote the fair and equitable sharing of the benefits arising from the utilization of forest genetic resources	IFF 56 (j) Note: Also related to the proposals for action addressed in the Secretary-General's reports on traditional forest-related knowledge and forest-related scientific knowledge
	The role of women in sustainable forest management – Involve women in national forest programmes and enhance their role in sustainable forest management	IFF 56 (m), IFF 56 (n), IFF 66 (also in the following cluster)
	Enhanced role of indigenous and local communities in sustainable forest management – Development and implementation of programmes for sustainable forest management – Support to indigenous people and local communities by funding sustainable forest management projects, capacity-building, information dissemination and participation	IPF 17 (a), IPF 17 (f), IPF 29 (c), IPF 77 (f), IPF 131 (b), IFF 56 (f), IFF 66, IFF 115 (d), IFF 121 (b)
Common items	**Monitoring, assessment and reporting on social data**	IFF 121 (b) (also in the preceding cluster), IFF 129 (a)
	Promoting public participation	IPF 89 (h)
	Social aspects addressed in national forest programmes – National forest programmes and the socially relevant elements	IFF 122 (b), IFF 122 (d), IFF 129 (d), IFF 140 (a), IFF 144

(a) Progress and trends in the implementation of relevant proposals for action

17. Many member countries reported that they were signatories to various international conventions that guide access to and benefit sharing in forest genetic resources. In most such countries, access to and benefits from forest genetic resources is guided by policies, codes of conduct and legal instruments that are consistent with international conventions. In other countries and much of Africa, issues of access to forest genetic resources and equitable benefit sharing are still to be addressed at the policy and legislative levels. A few countries, for example,

Guyana and New Zealand, have formulated policies that explicitly recognize the need for indigenous communities to benefit directly from any commercialization of forest genetic resources found in their areas. In some cases, these policies make provisions for indigenous communities to get assistance in negotiating and documenting terms of equitable benefit-sharing arrangements. Most countries also indicated that they now recognized traditional knowledge of indigenous communities as intellectual property that should be protected by patenting laws to ensure that those communities benefited from use of that knowledge. Policy and legislative instruments to implement these ideas are, however, not yet well defined in most cases. The report of the Secretary-General on traditional forest-related knowledge (E/CN.18/2004/7) provides additional information on this issue, particularly as regards the utilization of traditional knowledge for sustainable forest management, the development of intellectual property rights for traditional forest-related knowledge and the promotion of equitable benefit sharing.

18. Countries have adopted highly creative and situation-specific benefit-sharing best practices involving both monetary and non-monetary benefits in the short, medium and long term. They also noted increasing responsiveness among non-governmental organizations and the private sector to the demands of source countries for more equitable sharing of benefits of genetic resources. Intermediary institutions have brokered successful benefit-sharing agreements between source countries and commercial users tailored to specific circumstances, but guided by basic standards of best practice.

(b) Experiences and lessons learned

19. Despite having put in place the policies and codes of conduct to promote equitable sharing of forest genetic resources, most countries have found the implementation of these policies to be highly challenging, as this would require detailed management of data on collections in such a way that ex-situ collectors can honour commitments they made in the terms under which they acquired specimens. In most cases, countries have found it very difficult to track or control successive uses of or modifications to the materials collected.

20. Forest genetic resources are accessed from the country of origin by the private sector through various routes and they often pass through many hands before the end products reach the markets for consumers. Sometimes the product that is commercialized is not physically linked to the original genetic resources collected, but may have been manufactured based on chemical structures originally found in nature. Ex-situ collections of materials can be kept for hundreds of years and, by the time the material is eventually used, records of where it was collected, and under what terms, may be unavailable. All these factors make it extremely difficult to monitor the exchange of genetic resources and their derivatives and to enforce access and benefit-sharing agreements. As a result, a flexible and highly informed approach to access and benefit-sharing arrangements at the national level is the most effective.

21. Establishing instruments to ensure equitable sharing of genetic resources between source countries and processors has proved to be a daunting task. The problem is even more acute when establishing benefit-sharing mechanisms to channel fair and equitable remunerations to local and indigenous communities that are major stakeholders in the sustainability of such genetic resources. If indigenous

communities are to benefit from forest genetic resources, more creative, indirect methods of rewarding source communities need to be developed to ensure equitability. The use of transfer payments for forest products and services being provided could be a workable option for achieving this.

2. The role of women in sustainable forest management

22. Today, in many countries around the world, rural women are still the major caretakers and users of forests. Each day, they walk long distances to gather fuelwood and fodder and women, with the help of children, are mostly engaged in the collection of edible fruits, nuts, plants, leaves and small animals. They use bark, roots and herbs for medicines and tree fibre to make baskets and mats. Women are also central to the management of forested catchments, which prevent soil loss and ensure a continuous supply of clean water for humans and livestock. Far more women than any other social group are involved in the processing of non-timber forest products into goods for household use and cash income.

23. Activities related to forestry often demand a great deal of women's time and labour in rural areas. In many parts of the world, women's wealth of knowledge on forest resources has either been ignored or undermined, owing to lack of voice, unfavourable land-tenure structures, restrictive cultural practices, low levels of education and limited access to credit. Women are often excluded from decision-making and neglected by development programmes, even when they act as heads of household, which they often do.

(a) Progress and trends in the implementation of relevant proposals for action

24. Gender-sensitive community forestry programmes by national forestry departments in many developing countries, in collaboration with international research and development agencies, have achieved high levels of participation by women and have generated many lessons for project managers and implementers. In most of these programmes, there have been reports of various initiatives by women, which not only contribute to the development and protection of their forests, but also establish women and women groups as independent decision makers. Most such initiatives are making a notable contribution to reforestation and forest management efforts through the dedicated work of committed groups of women.

25. In many ways, rural women are often the most hurt by the global problem of deforestation, but they have also proved to be crucial to the solution. Legendary cases of rural women leading the resistance to cutting of forests have been reported from Cape Verde, China, Honduras, India, Indonesia, Jamaica, the Sudan and Thailand. From their experiences, women in these areas knew that the cutting of forests would lead to flooding and landslides. They are also planting trees to stabilize soils and hillsides and produce more forest products, establishing greenbelts and shelter belts. These are some of the numerous examples of how women have turned sustainable forest management from rhetoric to reality and improved their families' livelihoods at the same time.

26. Because of the increased recognition of women's contributions to forests, most Member States reported that local foresters, community development agents and development assistance programmes were increasingly involving women, and their needs and knowledge, in forestry project design and implementation. They were supporting women's groups of various kinds, making credit and income available to

women and exploring local gender issues, as well as taboos, customs and other constraints to a woman's potential to participate in decision-making and to use forests sustainably.

27. Member States reported many cases of women who have succeeded in different spheres within forestry. Deliberate policies to increase female students in the forestry disciplines and associated research and extension have seen the composition of graduates rising from less than 5 per cent in the early 1990s to nearly 50 per cent by 2002 in many developing countries. In the Philippines, an extraordinary 54 per cent of the graduates of the University of the Philippines Los Banos College of Forestry are women. Women have also become practising foresters in sufficient numbers to have largely dispelled the myth that "forestry is a man's domain". In the United States Forest Service, about 30 per cent of today's forestry professionals and 20 per cent of the supervisors are women, as compared to 1 per cent in 1976.

28. Women have also been moving into positions of responsibility in the private sector in many countries. They are top executives in multinational wood and paper companies, trade associations, wood import companies and allied businesses in the developed countries, and producers and exporters in Latin America, Asia and Africa. A number of women are chairpersons or board members of international forestry research and development organizations and committees that make key decisions on forestry issues.

(b) Experiences and lessons learned

29. The majority of initiatives have noted that reaching women, and people in general, is much more complex and often takes longer than anticipated. Working with women sometimes requires a more sustained effort than dealing with men, because of the generally lower levels of numeracy, increased workloads and conflicting demands on women's time, legal issues such as land tenure and lack of experience or cultural sensitivities to interacting with outsiders or men. Project strategies, work plans and human and financial resources therefore need to be determined at the outset with these insights in mind.

30. The contribution of women in the forestry sector varies from massive involvement at the grass-roots level to a much leaner presence at the professional and technical levels. Too often, a limited view of women's participation in forestry as a provision for labour builds negative perceptions of exploitation and increased workloads. Targeting women's participation should be broader to ensure that women are not deprived of job and training opportunities in the forestry profession. This approach is required to ensure that women do not continue to be marginalized in terms of access to benefits and voice in decision-making.

31. Although generally, women have made progress, more needs to be done to achieve a critical mass of women at the decision-making and managerial levels that will ensure active participation of women in all aspects of the management, conservation and sustainable development of all types of forests.

32. The links among health, population, and women's involvement in public life may contribute to efforts to reduce population pressure in forests (to the advantage of both forests and women). Health issues may serve as a practical means through which to involve women in forestry.

3. Enhanced role of indigenous and local communities in sustained forest management

33. Community involvement in forest management over the past decade has ranged from participation to recognition of ownership rights to resources by indigenous groups where local people make the decisions on the management of the resources and the resultant benefits. In many instances where progress has been achieved in terms of access rights or ownership, a number of barriers, such as unsuitable obligations in forest management, regulatory burden and constraints to market entry, still limit the benefits of sustainable forest management.

34. Where long-term ownership or access rights traditionally exist, private forest owners have been recognized as key contributors to and supporters of sustainable forest management principles. In addition, indigenous communities in both the North and South are increasingly organizing themselves and taking operational steps and political action to gain ownership or greater control over benefits from protected forests, upland watershed forests, production forests and timber concessions.

(a) Progress and trends in the implementation of relevant proposals for action

35. National forest programmes and policies emphasize the need for active public participation, especially by forest-dependent communities, as they are directly affected by decisions made with regard to the forests. This often includes a commitment by all stakeholders, especially the State, to create an enabling environment on the ground that allows space for preferences, perceptions and interests of people living in and around forests, as well as local communities.

36. Most Member States reported that various policy and regulatory instruments had been put in place to ensure that indigenous and local communities were involved in and benefited from the management of forest resources that they depended on. Although policies and forestry programmes are largely explicit about encouraging participation, implementation has been a great challenge for most countries. Cases on progress in the involvement of indigenous communities in forest resource management suggest that local people often respond enthusiastically to these initiatives, but are often disillusioned because bureaucracies fail to transfer significant authority, financial benefits are less than expected and powerful local elites seize any increase in authority or benefits. This is often the result of inadequate understanding of devolution policies in terms of capacity-building requirements for both government administrations and community-based organizations.

37. In most Member States, government forestry departments, as well as non-governmental organizations, are now involving local communities in the planning and implementation of forest management programmes. Protected forest areas, which were previously managed by government forest departments, usually to the exclusion of surrounding communities, are increasingly being managed jointly with local resource users. These co-management initiatives have allowed surrounding communities to benefit from key resources in protected forest areas subject to mutually agreed management plans. Forestry departments have also benefited from increased cooperation and self-policing from the surrounding communities, as exclusionary approaches had proved to be logistically and financially untenable.

38. At least 60 countries in the developing world have given local and provincial governments greater scope to manage some aspects of natural resource management during the past decade. In a few countries, restitution policies have allowed indigenous communities to successfully claim ownership rights to forests, resulting in them being key decision makers in the management of these forests. Generally, these cases, in which ownership or sufficient authority is given directly to resource users, tend to be more rewarding and responsive to local needs than allocating control to local government or district structures. In most such cases, local people are often well organized and supported by non-governmental organizations and other influential partners. Canada, Panama, the Philippines and South Africa are among the countries that are at different stages of exploring and implementing policy and legal mechanisms to reach agreements with aboriginal and tribal peoples to establish indigenous forest territories with varying degrees of autonomy. It is estimated that local communities and indigenous peoples now own 14 per cent of all forests in developing countries.

(b) Experiences and lessons learned

39. In many countries, participatory and community forestry is proving to be a cost-effective and socially acceptable approach to achieving sustainable resource management. Communities and small private forest owners are also becoming increasingly concerned with forest degradation and are organizing themselves to take action against the illegal exploitation of forests and also to claim rights for greater control of those resources.

40. Where long-term ownership or access rights traditionally exist or have been transferred in a transparent way, communities and private forest owners have without doubt benefited from that empowerment, in addition to the direct benefits they get from the forest. It has been observed that good forest governance may lead to good governance in general.

41. Intracommunity variations that characterize most communities have not been adequately addressed in efforts to work with communities, including issues of ethnicity, power, wealth and gender. Achieving a sustained collective effort towards a common vision remains one of the biggest challenges in working with highly heterogeneous communities. In practice, identifying the "community" that should be involved in and benefit from forest resources has been difficult. Local-level administrative boundaries are rarely consistent with locally appreciated resource use boundaries, which tend to be fuzzy and highly flexible and to respond to a whole range of biophysical and social factors. Often, the attempt to impose strict boundaries undermines local livelihood systems and coping strategies, usually to the detriment of the most vulnerable households.

42. In the particular case of countries with economies in transition, forests have been or are still being restituted to their former owners. Small private forest owners now possess a large share of forests in their respective countries, although these private forests or family forests are very numerous and fragmented. Forest institutions and forest owners have not yet adapted to this new situation, which results in a breakdown of forest management systems. The transfer of forest ownership cannot be carried out abruptly. It requires appropriate measures to build capacities for sustainable forest management, develop suitable institutional frameworks and create a sense of ownership.

43. From the point of view of the local resource users, lack of secure tenure or sufficient authority to make decisions on the use and management of forest resources can be frustrating. Devolution of authority over resources has often been from central government to local government, and rarely to the resource users themselves. In cases where significant authority to make decisions on forest resources have been devolved to local levels, more powerful local elites have often captured the benefits of collective action, in the absence of appropriate local institutions.

44. Transforming local traditional institutional arrangements for managing forestry resources into more accountable and transparent structures is often more elusive than perceived, although building on these institutional arrangements is still the best option in many countries. More still needs to be done to ensure that local institutional arrangements have checks and balances against the capture of all control and benefits by powerful local elites. Much of the effort to decentralize has stopped short of a real transfer of authority and power to communities and, in some cases, has actually decreased local communities' authority over the resources they have managed traditionally.

45. Other setbacks to active participation by local people include the long-term nature of most forestry investments, which discourages people from participating in production and management; disputes over such resources as water and land, which undermine collective action; and the nomadic lifestyle of some indigenous communities.

B. Emerging issues

46. When looked at collectively, the scope of the IPF/IFF proposals for action on social and cultural aspects of forests is limited, especially with regard to cultural aspects. Issues, such as integrating the cultural, spiritual and ethical values of forests into sustainable forest management, welfare of forest labour, corporate responsibility and poverty alleviation, as well as forest versus conflict management, have not been addressed. Nevertheless, there is a wealth of literature on these issues that can help to orientate work in this field. The significant decline in employment in the forest sector is expected to continue in a number of countries.[9] The social implications, especially the impact on rural livelihoods, deserve due consideration.

47. Forests and culture have been intertwined throughout human history.[10] On the one hand, forest landscapes are formed by cultural belief and management systems, and on the other hand cultures are materially and spiritually built upon the interaction between man and forests. These can include sacred groves and trees as powerful symbols, such as the Tree of Life in Mesopotamia and India, which feature in many of the world's religions, the Amazon World Tree and the oak trees of England and Scotland, among others. Numerous other examples of spiritual and cultural values of forests are provided in this invaluable reference, including culturally based forest management systems. Traditional knowledge and use of species that provide numerous economic benefits to local communities are highlighted. Attention is given to forest management and conservation, rooted in cultural perspectives and appreciation of forests and their components.

48. Existing literature provides a comprehensive analysis of the conceptual foundations of and basic principles in forestry ethics,[11] which review a number of

codes of ethics relevant to natural resources, including the Code of Ethics for Members of the Society of American Foresters. It also addresses ethnical issues in global forestry, touching on issues such as harvesting, wood use and trade, as well as critical issues, such as land tenure and governance, that need to be addressed in enhancing local community participation in sustainable forest management.[12]

49. The analysis of experiences in decentralization in forestry and conflict management and the recommendations on processes for effective policy-making and implementation is of particular relevance in this regard.[13]

1. Linking social and cultural aspects of sustainable forest management to the Millennium Development Goals

50. Currently, the IPF/IFF proposals for action are quite narrow and not adequately linked to the global debate on the development agenda. Every opportunity must be taken to link specific forestry actions to global development issues, to gain a broader profile for forests and forestry. In so doing, the social and cultural needs of local people are also likely to be better met, as outcomes will be firmly centred on the Millennium Development Goals and the Johannesburg Plan of Implementation.

51. The poor demonstration and documentation of the linkages between the role of forests and poverty reduction has manifested in insufficient allocation of national resources and official development assistance for sustainable forest management. Owing to the insufficient allocation of these resources, the transition to sustainable forest management and its potential benefits to forest-dependent communities have not been achieved to the desirable extent. Unsustainable forestry practices adversely impact on social cohesiveness of forest-dependent communities and the environment.

52. Poverty reduction strategy papers could promote awareness and contribute effectively to poverty reduction aspects of the forest sector. The papers could address the barriers that exist for enhanced access to official development assistance for sustainable forest management.

2. Social impact assessment for sustainable forest management

53. Social impact assessment, although a project-based tool, offers insights into the broad range of topics covered by the international arrangement on forests, if the full spectrum of social and cultural issues is to be tackled. Some of the topics to be addressed include:

- Way of life: how people live, work and interact
- Culture: shared beliefs, customs and values
- Community: its cohesion, stability, character, services and facilities
- Political systems: the extent to which people are able to participate in decisions that affect their lives, the level of democratization
- Environment: the quality of the air and water that people use, the availability and quality of the food that they eat, the level of hazard or risk, the adequacy of sanitation, their physical safety, and their access to and control over resources

- Health and well-being: defined by the World Health Organization as a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity
- Personal and property rights: particularly whether people are economically affected, or experience disadvantage, which may include a violation of their civil liberties
- Fears and aspirations: people's perceptions about safety, their fears about the future of their community and their aspirations for their future and that of their children.

54. Resource use patterns are often dependent on all these social factors. With respect to resource governance, there is a need to devise with systems that promote a mutually acceptable balance of power and authority among local communities, regional authorities and the State, following the principle of subsidiarity[14] in order to protect local interests, as well as the wider interests of neighbouring communities and other stakeholders.

3. Decentralization and devolution of authority to local levels

55. The need to devolve appropriate authority over resources to local levels should be accompanied by strategies to strengthen the capacity of local-level institutions to be adaptive and responsive to local needs in order to be able to recognize the needs of the marginalized group. Evolving institutions should be able to deal with power dynamics within communities and guarantee accountability and transparency to gain legitimacy among local people. Ultimately, the challenge is to ensure that decentralized authority is more accountable and transparent than centralized authority has been.

56. The country-led initiative, in support of the United Nations Forum on Forests, on decentralization, federal systems in forestry and national forest programmes, held in Interlaken, Switzerland, in April 2004, sponsored by the Governments of Indonesia and Switzerland, the United Nations Forum on Forests secretariat and the Centre for International Forestry Research, will explore how countries that are undergoing decentralization are addressing more effectively social and cultural concerns, interests and needs. For the meeting, although the IPF/IFF proposals for action do not refer specifically to decentralization, those proposals for action that are of relevance have been identified. These refer principally to participatory mechanisms, the integration of local interests in national forest programmes, the necessary enabling conditions and support mechanisms and critical issues, such as equitable benefit sharing, land tenure and resource use rights, and protection of traditional forest-related knowledge.

4. Monitoring trends in devolution of authority

57. While there is a shared recognition that devolution of authority over forest resources to communities and other local stakeholders is gradually taking place worldwide, there is no accurate monitoring of this trend. Devolution can take place in various forms, from permanent ownership to limited access rights. To guide policy makers who are instrumental in the promotion of participatory forestry, there is a need to improve existing knowledge on forest ownership and devolution of

authority, and to develop the appropriate monitoring methodologies and incorporate them into forest assessments.

5. Conflict management among stakeholders

58. The involvement of all stakeholders in decision-making will, in many cases, reveal conflicting concerns and needs that will have to be brokered. A significant amount of work has been undertaken in other areas in conflict management, which is generally a more constructive approach than conflict resolution. Greater attention has to be given to the development of mechanisms and guidelines for conflict management in support of sustainable forest management.

6. Trees outside forests

59. Trees outside forests are an important resource for rural people in many regions, particularly in arid countries where forest cover is limited. Trees can provide food, medicinal products and materials that support the livelihoods of rural people, protect against land degradation and help to regulate hydrological processes, among other things.

7. Urban and peri-urban forests

60. Urban and peri-urban forests are of increasing importance during the last two decades, particularly in developing countries. These forests have long been recognized in developed countries as important resources for, among other things, recreation, education and quality of life, but with demographic shifts in developing regions, mostly in Asia and Latin America, these resources are coming under increasing pressure and are taking on a greater importance for a variety of reasons.

8. Forest ethics

61. By adopting the Millennium Declaration in 2000, the world's leaders recognized their moral responsibility for human well-being, environmental sustainability and the livelihood and cultural integrity of peoples around the world. Correspondingly, in the World Summit on Sustainable Development process, considerable attention was given to the need for sustainable development actions to be based on a sound ethical framework, building on common elements of different religious and ethical systems, such as the Earth Charter, which is a declaration of fundamental principles for building a just, sustainable and peaceful global society in the twenty-first century.[15,16]

62. In addition, there has been development of a global code of ethics in forest-related sectors, such as ecotourism and international trade in chemicals,[17] and of codes of ethics for professional forestry associations and institutes in several countries.

63. At the grass-roots level, there is growing activism focusing on the marketplace and the moral conscience in the consumers of forest products. These organizations work on educating consumers, large corporate purchasers and distributors making them aware of the social and environmental impacts and the ethical dimensions of their purchasing decisions. At the core of this issue is the recognition of the importance of corporate responsibility.

C. Means of implementation

64. In most countries, meaningful involvement of local communities and women in the planning and implementation of forest management was believed to be undermined by highly limited financial resources and lack of appropriate human skills. Lack of political commitment to devolution of authority over resources to local people was also cited as a major setback to efforts to creating sufficient confidence among local people to actively participate in forest resource. The major challenge for most countries was the limited number of people skilled in conflict management and negotiation to reach an acceptable power balance among stakeholders. In most countries, the need to train bureaucrats to have a more bottom-up, flexible, responsive attitude and to learn about dealing with communities still remains. Expertise in facilitating the transformation of local institutions into more transparent and accountable entities is also limited in most countries.

65. More innovative models for technology transfer are also required, as most countries still rely on conventional extension approaches, which are currently constrained by limited resources. New approaches to knowledge transfer, which include training of trainers, training for transformation, experiential learning and action research, are being used with encouraging results.

D. Common items

1. Monitoring, assessment and reporting on social data

66. A number of countries have now designed very detailed and integrative frameworks for monitoring and reporting social data on forest use and management. Although countries report that these have proved to be very useful for both short-term and long-term planning, sustained implementation of these monitoring initiatives is threatened by the lack of sufficient resources to conduct the process thoroughly. Some countries have either discontinued monitoring and assessment activities or have restricted them to high-value forest areas, especially where harvesting is planned or ongoing.

2. Promoting public participation

67. The general trend towards more attention for strengthening stakeholder participation in policy processes has gained momentum in the forestry sector. The Intergovernmental Panel on Forests principles, and its respective successors, the Intergovernmental Forum on Forests and the United Nations Forum on Forests, which guide the formulation and implementation of national forest programmes, explicitly stress the need for participation of and partnerships with all stakeholders in a shared effort to achieve sustainable forest management. Greater stakeholder ownership in national forest programme processes, taking into account the needs of civil society, is expected to facilitate the successful implementation of forest policies, which promote decentralization and devolution of authority to local levels. However, there is a wide and diversified understanding about what participation means. Furthermore, there is very little knowledge and information available to provide guidance for those organizations that intend to conduct participatory processes. As a result, many participatory processes are implemented without serious consideration being given to the implications in terms of planning and

resource allocation to support stakeholder participation. Appropriate knowledge in methods and approaches to support participation in national forest programme processes is required to provide guidance to increase and optimize stakeholder participation. For example, the Food and Agriculture Organization of the United Nations, with the support of the National Forest Programme Facility, has put enhancing stakeholder participation in national forest programmes into practice to respond to this need.

68. Moreover, increased networking is needed to capture and better share the existing wealth of experience and expertise in participatory forestry in order to contribute to a better understanding of the decentralization and devolution processes.

3. Social aspects addressed in national forest programmes

69. A shift in worldwide trends towards more people-oriented approaches to achieving sustainable forest management has resulted in most countries emphasizing social aspects in their national forest programmes. Most country forest management strategies now reflect the realization that sustainable forest management involves more than solving technical problems and is largely about dealing with people's social, economic and cultural factors that either enhance or undermine their ability to benefit from sustainable use of the resource base. In order to facilitate learning and appreciation of local people's concerns and aspirations, national forest programmes are increasingly adopting participatory approaches to undertaking research, and to planning and implementing forestry projects. In achieving this, many national forest management divisions have positioned themselves to be learning organizations that give priority to attaining tangible social and economic benefits for local people, especially those that depend on forests. This "people first" perspective is integral to the social forestry approach, in which trees and people, their livelihood, social organization, needs, and cultural and economic endeavours are intrinsically associated.

IV. Conclusions

70. **The scope of the IPF/IFF proposals for action on social and cultural aspects is limited, especially concerning cultural aspects. Social and cultural aspects of forests needs to be more mainstreamed in the work of the United Nations Forum on Forests, with greater attention being paid to emerging issues, such as linkages to the Millennium Development Goals, social impact assessment of sustainable forest management, decentralization and devolution of authority to local levels, conflict management among stakeholders and forest ethics.**

71. **Social and cultural aspects of forests now feature prominently in forestry policy and legislation of most countries. A notable shift in perspectives towards more people-oriented forestry is evident in both the North and South. To place forests and forestry firmly in the global debate, it is necessary to be explicit about the links between specific proposals for action and broader development goals.**

72. **Progress in achieving greater and more equitable sharing of benefits has, however, been limited by the lack of implementation of many policy provisions that are central to social forestry. This is often the result of a lack of confidence that local stakeholders can manage forest resources. The slow progress in giving local people ownership and control over forest resources they depend on has undermined local people's enthusiasm to actively participate in forestry. Limited resources and facilitation skills has also undermined efforts to transform local-level institutions into more transparent and accountable entities that can ensure equitable access and benefit sharing in forestry.**

73. **The significant decline in employment in the forest sector is expected to continue in a number of countries. The social implications, especially the impact on rural livelihoods deserve due consideration.**

V. Points for discussion

74. The Forum may wish to:

(a) **Commit to continuing and urge Member States to continue the efforts to mainstream the IPF/IFF proposals for action on social and cultural aspects of forests in national forest programmes and strategies in support of sustainable forest management, with a view to increasing the effective participation of the people living in and around forests, including forest workers, local communities, small, private forest owners and indigenous peoples, of which women form an integral part, and in promoting the fair and equitable sharing of the benefits arising from the utilization of forest goods and services;**

(b) **Commit to reviewing and urge Member States to review national forest programmes, strategies, forestry standards and codes of practice, so as to document the contribution of forests to poverty-reduction activities, and to ensure the observation of internationally recognized labour standards;**

(c) **Invite Collaborative Partnership on Forests members to prepare a synthesis report of the contribution of the forest sector in meeting the targets set forth in the United Nations Millennium Declaration for consideration at the fifth session of the United Nations Forum on Forests, in conjunction with the review of progress and consideration on future action;**

(d) **Encourage the establishment of instruments to promote equitable sharing of the benefits from forest goods and services, including indirect methods of rewarding source individuals and communities, such as the use of transfer payments for forest products and services provided;**

(e) **Urge Member States to adopt the application of social impact assessment methodologies in their national forest programmes and strategies;**

(f) **Recommend that Member States take into account the lessons learned and proposals concerning decentralization and devolution of authority, building on the deliberations at the country-led initiative on decentralization, federal systems in forestry and national forest programmes, held in Interlaken, Switzerland, in April 2004.**

Notes

[1] The common themes include (a) promoting public participation; (b) national forest programmes; and (c) monitoring, assessment and reporting.

[2] See the report of the Secretary-General on economic aspects of forests (E/CN.18/2003/7), presented at the third session of the United Nations Forum on Forests, held in Geneva from 26 May to 6 June 2003, para. 37.

[3] IFF 64 (a), IFF 64 (b), IFF 64 (c), IFF 64 (e) and IFF 67.

[4] IFF 84, IFF 85 (b), IFF 85 (c) and IFF 85 (d).

[5] IPF 58 (b) (ii), IPF 58 (b) (iii) and IFF 64 (g).

[6] IPF 58 (b) (iv), IPF 70 (b), IPF 104 (a), IPF 128 (a), IPF 133 (c) (v), IPF 133 (d) (iv) and IFF 64 (i).

[7] A total of 17 proposals under IPF 40.

[8] IFF 74 (a), IFF 74 (b), IFF 74 (c), IFF 74 (d), IFF 75, IPF 46 and IFF 89.

[9] Blomback, P., Poschen, P. and Lövgren, M. Employment trends and prospects in the European forest sector. A study prepared for the European Forest Sector Outlook Study. Geneva Timber and Forest Discussion Papers ECE/TIM/DP/29, United Nations, Economic Commission for Europe Timber Committee, 2003.

[10] United Nations Environment Programme, "Chapter 9: Forests Culture and Conservation", by Sarah A. Laird, in *Cultural and Spiritual Values of Biodiversity* (London: Intermediate Technology Publications, 1999), pp. 345-396.

[11] Peter C. List, ed., *Environment Ethics and Forestry: A Reader* (Philadelphia: Temple University Press, 2000).

[12] Clark C. Gibson et al., eds. People and Forests: Communities, Institutions, and Governance (Cambridge, Massachusetts: The MIT Press, 2000).

[13] James Mayers and Stephen Bass, Policy that Works for Forests and People, Series No. 7 (London: International Institute for Environment and Development, 1999).

[14] The subsidiarity principle suggests that decisions about resources are best made by structures closest to those resources. Only those decisions that cannot be made at a local level because of their wider implications beyond the local area should be made at a higher level.

[15] The Earth Charter: Values and Principles for a Sustainable Future. A brochure is available online at www.earthcharter.org.

[16] United Nations Educational, Scientific and Cultural Organization General Conference resolution 32 C/COM.III/DR.1, adopted on 16 October 2003.

[17] The General Assembly adopted resolution 56/212, entitled "Global Code of Ethics for Tourism", on 21 December 2001. The Code of Ethics on International Trade in Chemicals was adopted in 1994 by the United Nations Environment Programme.

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Implementation of the proposals for action of the Intergovernmental Panel on Forests/Intergovernmental Forum on Forests and the plan of action of the United Nations Forum on Forests: progress in implementation

Forest-related scientific knowledge

Report of the Secretary-General**

Summary

The present report, prepared for the fourth session of the United Nations Forum on Forests, provides information on the progress in implementation of the proposals for action of the Intergovernmental Panel on Forests (IPF) and the Intergovernmental Forum on Forests (IFF) related to forest-related scientific knowledge.

Progress in strengthening science and policy interaction has been made at the international level, but the degree of interaction and the extent to which forest-related scientific knowledge is used for policy-making varies considerably among countries and tends to be low in particular in developing countries.

A number of information services and systems have been established in recent years, including a global forest information service, facilitated by rapid advancements in information and communication technologies. Related networking activities have reduced duplication of research and facilitated skills development. Nevertheless, the lack of information and communication technologies and related capacity in many countries constitutes a major obstacle for the generation, provision and sharing of forest information.

* E/CN.18/2004/1.

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Forest-related scientific knowledge has been enhanced on a range of environmental, economic and sociocultural aspects of forests as well as on forest policy tools, such as criteria and indicators of sustainable forest management. The need to address cross-sectoral issues, such as forest-poverty linkages, is an emerging challenge for forest research, requiring increased cooperation across disciplinary and institutional boundaries.

Various education and training activities as well as collaborative research networking at all levels have helped enhance the capacity of forest research organizations in many developing countries. Nevertheless, the forest research capacity of developed and developing countries has continued to be significantly disproportionate. Overall, this lack of human and institutional research capacity in many countries constitutes a major factor limiting the contribution of science to sustainable forest management.

Public funding for forest research, including through official development assistance, has been declining in many countries. Private sector investment has increased mostly in developed countries, but has been focused on a limited range of research topics. These developments point to the need to mobilize resources for forest research on all aspects of sustainable forest management.

A number of countries have initiated national forest programmes or similar processes that involve science. Research has contributed to the development of adaptive collaborative management systems and strengthened roles for local communities and indigenous groups, which have contributed to management planning and implementation.

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I. Introduction

1. In adopting its multi-year programme of work at its first substantive session,[1] the United Nations Forum on Forests decided that forest-related scientific knowledge would be addressed at its fourth session. With the inclusion of this element on its agenda, the Forum underlined the importance of enhancing the contribution of research to forest policy and practice.

2. The present report has been prepared to facilitate discussion of forest-related scientific knowledge at the Forum's fourth session. In accordance with the multi-year programme of work, it focuses on describing progress in implementation of the proposals for action of the Intergovernmental Panel on Forests (IPF) and the Intergovernmental Forum on Forests (IFF) related to forest-related scientific knowledge.[2] The report also outlines experiences gained and lessons learned in implementation, and draws attention to internationally significant emerging issues that are relevant to the work of the Forum. The report presents conclusions and points for discussion at the fourth session.

3. The draft of the report was prepared by the International Union of Forest Research Organizations (IUFRO) in collaboration with the Centre for International Forestry Research (CIFOR) and the World Agroforestry Centre (ICRAF) and with significant contributions from other members of the Collaborative Partnership on Forests. Sources of information used to prepare the report include the national reports submitted by States members to the Forum at its fourth session that were available at the time of preparation, information provided by IUFRO member organizations, the proceedings of the International Consultation on Research and Information Systems in Forestry, held at Gmunden, Austria, in September 1998, as well as empirical and case studies, available literature, and Internet sources.

II. Background

4. The international community has recognized the importance of forest-related scientific knowledge in relation to achieving sustainable forest management, including the internationally agreed objectives of sustainable development. The Forest Principles[3] agreed upon at the United Nations Conference on Environment and Development, underline the importance of timely, reliable and accurate information on forests and set out the objective of strengthening scientific research as well as technological developments. Chapter 11 of Agenda 21 adopted by the Conference[4] identifies scientific and technological means in each of its programme areas.

5. The role of forest-related scientific knowledge in policy development and decision-making was also considered by IPF and IFF. IPF addressed forest research under its programme element III, "Scientific research, forest assessment and development of criteria and indicators for sustainable forest management".[5] IPF recognized the need to strengthen research, identified related institutional needs and also recognized the importance of developing and identifying research priorities at all levels. To this end, it set out a number of proposals for action. Building upon the progress made by IPF, IFF further deliberated on forest research under programme element II.D, "Issues that need further clarification".[5] IPF and IFF adopted sets of proposals for action addressing forest-related scientific knowledge.[2] The proposals

for action are summarized in the following table. These summaries are neither negotiated text nor are meant to replace negotiated text. They are provided to facilitate discussion of the proposals for action.

Summary of IPF/IFF proposals for action related to scientific forest-related knowledge

Type of action called for	*Proposals for action*
1. Strengthening interaction between science and policy Improve linkages between scientific research and policy processes and involve guidance from all interested parties	IFF 96 (c), IFF 98 (b)
2. Promoting the provision and efficient sharing of existing information and strengthening networks Make results and information available for all users to support decision-making, develop new and innovative means of disseminating information and technologies and promote and make use of existing networks, institutions and mechanisms in efficient sharing of information	IPF 58 (b) (vii), IPF 94 (a) (ii), IPF 94 (a) (iii), IFF 97 (c), IFF 98 (c)
3. Addressing the knowledge gaps and setting the research priorities Set research needs and priorities nationally, regionally and globally, address knowledge gaps, and promote and strengthen research efforts in support of sustainable forest management	IPF 46 (g), IPF 94 (a) (i), IPF 94 (b), IPF 94 (d), IPF 104 (c), IPF 50 (b), IFF 96 (d), IFF 96 (a), IFF 98 (a), IFF 97 (d)
4. Strengthening research capacity and mobilizing funding for forest research Examine new ways to mobilize funding for forest research to accomplish its objectives and build capacity at the national, regional and global levels (means of implementation)	IPF 94 (a) (iv), IPF 94 (c), IFF 96 (b), IFF 97 (a), IFF 97 (b)
5. Applying participatory mechanisms to integrate research into planning processes (common item)	IPF 17 (e)

III. Implementation of the proposals for action related to forest-related scientific knowledge

A. Strengthening interaction between science and policy

6. Several innovative mechanisms have been established in recent years to facilitate systematic interaction between scientists, policy makers and other stakeholders in order to strengthen interaction between science and policy.

Science-policy interaction at the international level

7. The forest scientific community participates and contributes to the policy process related to forests in intergovernmental bodies, including the subsidiary advisory bodies, task-oriented expert groups and advisory groups set up by forest-relevant global conventions, instruments and organizations. In addition, multi-stakeholder dialogues provide opportunities for science-policy interaction.

8. Cooperation has been strengthened between the scientific community and international organizations, in particular the Food and Agriculture Organization of the United Nations (FAO) and the International Tropical Timber Organization (ITTO), by providing contributions to key publications, such as the FAO *State of the World's Forests* report, and by engaging in joint activities. For example, forest-related scientific knowledge has assisted ITTO in the development of the ITTO criteria and indicators for the sustainable management of natural tropical forests.

9. Increased science-policy interaction has facilitated the focused provision of forest-related scientific knowledge on a number of critical forest policy issues. Science has also played an important role in the development of internationally recognized instruments for sustainable forest management, including criteria and indicators and national forest programmes.

10. The forest scientific community has contributed to the development and implementation of the programme of work on forest biological diversity of the Convention on Biological Diversity,[6] as well as to the understanding of forest-related aspects of climate change and the priority topics "water, energy, health, agriculture and biodiversity" of the World Summit on Sustainable Development (2002). Research has also helped to develop a better understanding of forestry-poverty links. However, in spite of the progress achieved, interaction between science and policy needs to be further strengthened at the international level to enhance research uptake in policy-making and to facilitate research priority setting.

Science-policy interaction at the national and subnational levels

11. Various mechanisms are used to facilitate science-policy interaction at the national and subnational levels. These include, among other mechanisms, forums for the exchange of information, experiences and views, and advisory councils and groups with tasks such as setting research priorities and promoting the dissemination of research results. While intermediary research promotion institutions for providing and allocating funds exist in most countries, very few have established organizations that act as an interface between Governments, practitioners and researchers specifically in the field of forestry.

12. The use of scientific knowledge in policy-making varies considerably among countries. For most of the past century, research, in developing countries in particular, has been focused predominantly on improving economic efficiency in forest production systems and the quality of traded goods or services. For example the IUFRO Task Force on the Science/Policy Interface found that forest policies in Southern Africa have been influenced more by national macroeconomic policies than by developments in forest research.[7] At the same time, a number of examples exist of effective research involvement in addressing other key policy issues. For instance, the Government of Indonesia, through its Centre of Financial Analysis and Transaction, has worked closely with CIFOR in addressing forest-related and environmental crimes as predicate offences in Indonesia's new regulations on money-laundering.

13. National forest programmes or similar processes at the national and subnational levels can help overcome barriers and gaps in the interaction between science and policies.[8] The role of science and research in a national forest programme is typically twofold: first, science and research organizations serve as providers of knowledge and advice concerning practical design options for national forest programme processes and concerning the issues/problems addressed; and second, the scientific community acts as one of the several stakeholders participating in the national forest programme process.

14. In many countries, there is a movement towards the decentralization of government functions and the devolution of forest planning and management responsibilities to lower levels of Government, indigenous and local organizations, the private sector and other stakeholders. Science has contributed significantly to the design of the institutional arrangements and adaptation processes in a number of countries. For example, research has had a clear impact on processes of decentralization in Bolivia, Nicaragua and Zimbabwe.[9]

B. Promoting the provision and efficient sharing of information

15. In recent years, the volume of forest-related scientific information generated globally and the sources of such information have expanded significantly. Increasingly, such information is published and made available through electronic means. Information and communication technologies have advanced rapidly and become far more widely available. They have also significantly facilitated communication and networking among providers and users of information where adequate information and communication technologies infrastructure and facilities exist. At the same time, access to information and communication technologies and their use continue to be unequally distributed on a global scale. Computer illiteracy, limited information and communication technologies facilities and general lack of financial resources in most developing countries limit the full materialization of the benefits of information and communication technologies for sustainable forest management.

16. A commitment and desire was declared at the World Summit on the Information Society to build an information society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life.[10] Among other aspects,

the Summit emphasized the need for universal access with equal opportunities for all to scientific knowledge and recognized the creation and dissemination of scientific and technical information as principles of an information society.

Information-sharing and resource discovery

17. Building on one of the key recommendations of the International Consultation on Research and Information Systems in Forestry concerning enhanced access to all forest-related information, IFF requested international organizations to explore possibilities for a global forest information service. Consequently, a IUFRO Task Force has worked to develop the Global Forest Information Service (GFIS), an Internet-based information resource discovery tool that provides access to forest information resources on a global scale.[11]

18. Through GFIS, information resources can be searched and located in multiple formats such as maps, research reports, journal articles and databases. In January 2004, the Service held over 125,000 catalogue records provided by forestry organizations in Africa, Asia, Europe, Latin America and North America. GFIS is the result of an international partnership project involving national and international forestry agencies, research institutes, universities, libraries and other government and non-governmental organizations that promotes the dissemination and sharing of information related to forests and trees.

19. In addition to GFIS, there are other Internet-based bibliographical information services and library networks which facilitate the location of forest-related information. For example, the "Info Finder", established by the Consultative Group on International Agricultural Research (CGIAR) in collaboration with the FAO World Agricultural Information Centre and Future Harvest Centres, allows searching for digital information on the web sites of these institutions.[12] Bibliographical information services are also provided through CABI Publishing, the FAO International Information System for the Agricultural Sciences and Technology and the IUFRO online reference library, known as DABIS.[13]

20. Progress has also been made in recent years in the development of information services and systems at regional levels. For example, the Agricultural Information and Documentation System for the Americas (SIDALC)[14] provides access to agricultural information, including forest-related information, on the basis of a decentralized network of national agricultural information systems. The GFIS-Africa Project focuses on improving access to scientific information by means of capacity-building in regional research institutions and sharing experience and good practice in information management. Efforts in the European region have resulted in the development of a prototype of a European Forest Information System.[15]

Dissemination of information

21. In addition to providing search facilities for locating information, numerous Internet-based mechanisms have been established for the dissemination of forest science information. These include electronic list-servers, peer-to-peer announcement lists, and topic pages on web sites, among other things. Information circulated through these mechanisms ranges from research results to directories of forest-related libraries, documentation centres and subject specialists. Increasingly, extension services are making use of modern information and communication technologies, such as the Internet.

22. The use of dissemination strategies based on technological media is, however, limited mainly to the developed world. The digital and knowledge divide — particularly the gap between those with and without access to the Internet — continues to be a challenge in the world. International forest research organizations have found that while most forest research institutions in developing countries are connected to the Internet, only some are equipped with computer networks, and several have only shared use of Internet or e-mail access.[16] Internet-based means of disseminating information, such as electronic journals, can therefore become "gatekeepers" that largely exclude the developing world.

23. Printed publications continue to be a vital means of information dissemination. Nevertheless, the differences in the number of scientific articles published in developed and developing regions hint at the imbalances in science and technology capacity between different regions of the world. According to the *State of the World's Forests 2003*, in 1999 about 70 per cent of all scientific articles were published in North America and Western Europe, while less than 1 per cent originated from sub-Saharan Africa.[17]

24. Despite the advances in information and communication technologies in past years, only a few forest research organizations have developed interactive strategies for dissemination of forest-related scientific knowledge. The IUFRO Task Force on Public Relations in Forest Science has studied some research activities that focus on ways and means of disseminating research findings. For example, the European Union funded research project on indicators and tools for restoration and sustainable management of forests in East Africa has identified two major factors contributing to successful dissemination of forest-related scientific knowledge: partnerships with forest user groups, and contacts and links with forestry projects and programmes in the regions.[18]

C. Addressing knowledge gaps and setting priorities

25. At the global level, the IPF/IFF proposals for action contain a number of issues on which countries and international organizations could promote research topics. Based on that, at the regional levels, forest research priorities could be further defined. In this regard, networks such as the Asia-Pacific Association of Forestry Research Institutions and the Forestry Research Network for Sub-Saharan Africa, and meetings, such as the Regional Meetings on Forestry Research in Latin America at Curitiba, Brazil, in November 1999 and in Central Africa in Libreville in December 2001 and meetings organized by the European Forest Institute have shown tremendous potentials for priority setting for research at regional levels.

26. Forest research can also enhance understanding of forest ecosystem dynamics and functions as well as of the broad range of factors that affect forest health and productivity, such as climate change, storms, insects, diseases, invasive species and forest fires. For example, research on forest fires carried out in Brazil showed that threats and effects of recurrent forest fires in the Brazil Amazon were much higher than previously believed.[19] As a result, a government programme specifically addressing forest fires was initiated.

27. One of the key priorities for forest research is to build up comprehensive knowledge about the various economic and social benefits provided by forests. The ongoing development of sound valuation methodologies for forest goods and

services, together with the provision of market and trade-related data and information, and market-based policy instruments enable society better to capture the multiple social and economic benefits provided by forests. The work of CIFOR in Cameroon is one successful example in this direction. In 2003, it accelerated the dissemination of market information (market trends, product specialization, storage and availability of raw materials) to improve marketing strategies and incomes of local communities and traders of forest products (with a large focus on non-wood products). Preliminary results indicate that traders could increase their incomes significantly as a result of this market information.

28. A clear focus on stakeholder needs can help enhance the usefulness of forest research. Experiences, gained through using adaptive collaborative management approaches, have led to successes on the ground at research sites in Zimbabwe, Nepal, Bolivia, Malawi and the Philippines. Likewise, one of the workshops of the IUFRO Task Force on the Science/Policy Interface, held at Chennai, India, in 2002, concluded that obtaining feedback in the research process and using that feedback to guide research priorities is critical for making research relevant to potential users.[20]

29. Despite the progress achieved in recent years, the lack of human and institutional research capacity in many developing countries has continued to be a major limiting factor. In most countries the capacity is constrained by, inter alia, lack of political commitment to forest research, lack of a critical mass of scientists and expertise in many areas, inadequate funding for research programmes, poor systems of communication and transfer of research results to potential users, duplication of research efforts and lack of strategic planning.[21] There is also a clear need to develop research strategies that reflect country and regional priorities and capabilities.

D. Strengthening research capacity

30. Strengthening forest research capacity involves essential components such as training and education, collaborative research networking and information access and management.

31. Increasing the efficiency and effectiveness of human resources through training and education is a crucial means of enhancing forest research capacity. In order better to integrate scientific results into policy and management, IUFRO has developed a new strategic plan for the period 2002-2005 under its Special Programme for Developing Countries, with special emphasis on training topics related to the science-policy/management interface.[22] The Special Programme for Developing Countries also promotes research and networking activities among developing countries. The Forestry Research Support Programme for Asia and the Pacific, executed by FAO, is another effort assisting research institutions in strengthening their science and technology capabilities in forestry research.

32. The quality of education plays a key role in the quality of research and practical forest work. Moreover, collaboration between research and development institutions and universities contributes to the accomplishment of research objectives and helps make more efficient use of scarce research funds. At the regional level, a number of organizations promote collaboration between research and education. These include, inter alia, the Tropical Agricultural Research and Higher Education Centre and two networks attached to ICRAF, namely the African

Network for Agroforestry Education and the Southeast Asian Network for Agroforestry Education.

33. Strengthening communication and collaboration among researchers by means of networking constitutes an essential aspect of capacity-building. One important criterion for the success of a network is its ability to mobilize a critical mass of individuals and/or institutions that wish to collaborate. At the global level, IUFRO has been promoting cooperation among forest research organizations and scientists by providing a well-established thematic organizational structure for science collaboration. Fostering shared learning across countries helps science programmes remain innovative and more responsive and relevant to policy makers.

34. A number of regional networks have been established to promote research collaboration and strengthen research capacity in support of national and regional development. Networks established to date include the Asia-Pacific Association of Forestry Research Institutions, which was established in 1995 and has 63 member institutions, and the Forestry Research Network for Sub-Saharan Africa, which was established in 2000 and covers 41 sub-Saharan countries. In Latin America, a Forum of Heads of Forestry Research in Latin America was formed in 2001. FAO and IUFRO are collaborating with other partners in supporting these regional networking activities. The Asia-Pacific Association of Forestry Research Institutions has been recognized by IUFRO as its Regional Chapter for Asia and the Pacific.

35. The European Tropical Forest Research Network promotes communication among European research organizations and scientists concerning forests in tropical and subtropical countries. The European Forest Institute promotes, conducts and cooperates in forest research at the pan-European level.

IV. Experiences and lessons learned

Strengthening interaction between science and policy

36. In many cases it is found that policy makers do not use findings of a specific scientific study to take a policy decision.[23] Rather, research findings tend gradually to clarify issues and their interlinkages and/or introduce new concepts that may eventually influence policy decisions. Thus, even though research findings may not be directly employed in formulating specific policies, they do influence policy through the way issues are framed and understood.

37. The scientific community and the policy makers often have different expectations from each other. For example, research organizations are frequently confronted with the difficulty of balancing long-term forest research with the more immediate information requirements of policy makers. Continuous interaction and collaboration of research with policy actors and other stakeholders at various levels is likely to facilitate the formulation of strategies that will enhance the use and impact of research.

38. Mechanisms established at the international level have facilitated closer links between forest policy-making and forest-relevant science. However, despite the progress achieved, use of science in international policy deliberations needs to be further enhanced. More than that, stronger efforts are needed to facilitate science-

policy interaction within countries. In this respect, the existing lack of human and financial resources and inadequate communication constitute major bottlenecks for conveying scientific information effectively from the "science system" to the "policy system".[20] Therefore, stronger support of national governments and international cooperation programmes for expanding the participation, communication and networking capacities of national and subnational research organizations is essential. At the same time, stronger incentives need to be provided for scientists to engage in policy deliberation processes.

39. Contributing articles to key publications of intergovernmental organizations and processes and international non-governmental organizations have proved to be an important means for research organizations to disseminate research findings to potential users and to help shape national debates on topical issues, for example, forest concession policies, trade restrictions, government subsidies, deforestation, community forestry and similar decentralization arrangements.[24]

40. Often, the terminology used by scientists is perceived as being too technical and thus difficult for policy makers and practitioners to understand. Presentation of research-based information in language that is readily understood by policy makers and the general public will help increase its use.

Promoting the provision and efficient sharing of information

41. New information and communication technologies, with the Internet as the key vehicle, have significantly enhanced the provision and sharing of forest-related information worldwide. The development of GFIS contributes to meeting the need articulated by IFF for efficient sharing of information.

42. Experiences gained in the development of GFIS and in regional forest information services and systems underline the efficacy of building collaborative initiatives on existing regional and national networks, therewith improving coordination and reducing duplication of research. Sharing of expertise and experiences among participating organizations enables mutual learning and supports more harmonized approaches to the provision and management of forest-related information at a global scale.

43. At the same time, the existence of suitable information and communication technologies infrastructure is central to the provision and efficient sharing of forest-related information. Therefore, investments to enhance forest research capacity specifically need to address the lack of information and communication technologies infrastructure in forest research organizations, particularly in developing countries.

44. Development of the necessary skills is essential in order to benefit fully from new technologies. Stronger efforts are required to strengthen the capacity of forest research organizations in developing countries for generating forest-related data and information and for providing it by means of new technologies and mechanisms. For example, capturing the full potential of GFIS on a sustained basis will depend on the ability of research and other organizations all over the world to provide a critical mass of forest-related information.

45. Dissemination of forest-related scientific knowledge can be enhanced by problem-focused and mutual learning processes that involve communities and other stakeholders. However, links between organizations conducting forest-related research and user groups are often inadequate.

Addressing knowledge gaps and setting priorities

46. Science and technology have made significant contributions to addressing knowledge gaps at local, national, regional and global levels and to the implementation of many IPF/IFF proposals for action. At the same time, the lack of human and institutional research capacity in many developing countries has resulted in significant imbalances in research outputs globally and has continued to be a major factor limiting effective, relevant and timely scientific contributions in these countries.

47. Involvement of science in both policy and management planning has underlined the importance of developing a stronger focus on stakeholder needs. Forest research needs to increasingly adopt new, "client-driven" research agendas and approaches. In this respect, it is crucial to understand the needs of the intended audiences — including those of policy makers, forest owners, local communities, indigenous communities and other potential users of technologies and information — at an early stage in the research process.

48. While forest research in general has a good track record in producing solutions, evidence suggests that research findings are often not adopted. In setting priorities research organizations must therefore consider not only the importance of the problem to be addressed and the potential benefits of related research, but also the ease or difficulty for beneficiaries of capturing those benefits. Institutional and economic factors often have a strong influence on whether or not forest-related scientific knowledge is applied and therefore need to be taken into due consideration. Accompanying thematic research with an in-depth analysis of existing constraints to adoption of the results should, over the long run, help improve adoption rates.

Strengthening research capacity

49. The forest research capacity of developed and developing countries has continued to be significantly disproportionate. Developing countries face a number of constraints to research. For example, in Africa the following conditions prevail in many countries: insufficient collaborative research; poor linkages between research and intended users; inadequate flow of information and access to scientific literature; low levels of remuneration for researchers; and a lack of continuity in research programme support.[16] Strong efforts are needed by countries and the international community to overcome these constraints.

50. One of the most important components of research in developing countries is trained research scientists. The sustainability of applied research and development activities largely depends on inflow of new talent and a solid national research base in applied forestry fields. Therefore, building new expertise through training and education of scientists constitutes a key mechanism for transferring forest-related scientific knowledge to developing and economically disadvantaged countries.

51. Regional forest research networks constitute an essential tool for improving communication among scientists. Regional networking and collaboration in research have been shown to be efficient means for solving problems that are common to a broad geographic area, reducing duplication of scientific efforts, providing opportunities for complementary work and building a critical mass of scientists. Research networks involving government agencies, academia, and the private sector have also helped build stakeholder involvement. Nevertheless, further development of regional networks to serve as mutual learning platforms could further enhance their role in capacity-building.

V. Means of implementation: funding for forest research

52. Government funding for forest research has been decreasing in many developing countries, in part as a result of structural adjustment programmes that impose budgetary restrictions. Moreover, official development assistance, on which many least developed countries — especially in South Asia and sub-Saharan Africa — are dependent, has declined in recent years (see E/CN.18/AC.2/2003/2). Shifts in priorities of international donors may also disrupt the continuity of recipients' research programmes.

53. In contrast to the decrease in public funding, the share of private research funding has been increasing, in developed countries in particular. Often, countries have used public funding to create a favourable environment for private sector investment in forest research. Generally the private sector focuses on applied research in areas that provide competitive economic advantages, but it has been difficult to attract private sector investment in research addressing public benefits, such as environmental services derived from the forests

54. At the international level, significant funding support for research is provided by CGIAR, which supports a total of 16 international research centres, two of which — CIFOR and ICRAF, deal with forest issues. In addition, the Global Environment Facility (GEF) provides funding for forest-related programmes and projects, including research. Forest-related projects account for more than 50 per cent of the total GEF biodiversity portfolio.[25] GEF also recognizes the role of science through its scientific and technical advisory panel. In addition to these funding sources, various instruments established at the regional level provide financial support for international science cooperation.[26]

55. Public funding continues to be of vital importance for forest research all over the world and is of particular relevance for developing countries. In several of these countries, a considerable proportion of financial support to forest research is provided by development assistance agencies. During the last decade, the priorities of the donor organizations have changed towards a stronger focus on sustainable development. Therefore, in order to attract resources, an increasing share of forest research needs to be placed in the context of broader environmental and socio-economic issues — for example, concerning the role of forests in water resource management, food security or, more broadly, the eradication of poverty — in response to more integrated approaches to sustainable development.

56. In addition, there is a need to better communicate and demonstrate the positive impact of forest research. As with research in many fields, there is often a lack of information and accountability regarding the "on the ground impact" of forest

research, particularly where environmental service and livelihood-related benefits are key goals. This perceived accountability gap is a particular challenge when aiming to increase the investment in forest research.

VI. Emerging issues

Targeted research for decision-making

57. There currently does not exist a process for pooling scientific and technical information from past and ongoing research initiatives relevant to sustainable forest management. A wealth of scientific information on sustainable forest management has been generated throughout the past century. Moreover, since 1990, forestry research has responded to the challenges posed by climate change, biodiversity loss, land degradation and desertification, and unsustainable use of forests. New initiatives include, among others, the global forest-related research programmes of CGIAR, the Millennium Ecosystem Assessment, the Tropical Forest Canopy Programme and its Canopy Research Network and the Centre for Tropical Forest Science, a voluntary consortium of forest agencies, universities, research institutes and non-governmental organizations in 14 countries in Asia, Africa and Latin America.

58. These are but a few, although very important examples of the increased attention given to forest-related scientific research over the past decade. The challenge facing scientists, managers and policy makers is to integrate this vast, complex information and data into a user-friendly scientific and technical knowledge base in support of sustainable forest management, including the development and adaptation of new environmentally sound technologies and management practices.

59. Moreover, the integration of scientific outputs from various research initiatives is fundamental in identifying gaps in the knowledge base and areas requiring attention by the scientific community in the future. To achieve sustainable forest management, greater efforts are required to synthesize existing scientific information and traditional forest-related knowledge, as well as the results of ongoing forest-related research programmes, and to develop a global agenda for targeted research, especially on tropical forests, that responds to the most pressing needs for information and know-how facing managers and decision makers.

Interdisciplinary research crossing sectoral boundaries

60. The deliberations of global and regional organizations, institutions and processes addressing sustainable development, forest biological diversity, climate change, forest law enforcement and governance and other cross-cutting forest-relevant issues have indicated that effective forest-related policies require coordinated and integrated approaches across sectoral boundaries. This need for cross-sectoral approaches is an emerging challenge for forest research as well. Against the background of 1 billion of the world's people living in extreme poverty, there is an urgent need to generate more forest-related scientific knowledge about the linkage between forests and poverty and forests' contribution to poverty alleviation. Also, addressing agroforestry, soil and water conservation, food security,

energy, medicines and cultural values, requires an integrated approach combining different research fields and disciplines.

61. Information provided by research organizations indicates that the lack of forest-related scientific knowledge on a number of cross-sectoral issues as well of uptake of forest-related scientific knowledge by policy makers and practitioners is frequently a result of an insufficient ability of research organizations to establish meaningful interactions and linkages among different research fields and disciplines, including between the natural and social sciences. Greater efforts are needed to adapt intra-institutional structures and processes within research organizations and to establish suitable mechanisms for inter-institutional cooperation. In this regard, a workshop organized by FAO, the Forestry Research Support Programme for Asia and the Pacific and the Asia-Pacific Association of Forestry Research Institutes in Dehra Dun, India, in 2003 explored institutional changes needed in the Asia-Pacific region to address the new roles for forestry research, development and training agencies in the specific context of poverty alleviation.[27] It was clearly highlighted by the participants of the workshop that, with few exceptions, national research, development and training agencies in the region have to reshape themselves to meet the new demands and additional new roles.

Integration of science and research in management planning

62. International and national research organizations and institutions have taken various initiatives aimed at integrating science and research in management planning. Adaptive collaborative management has emerged as an approach that can help improve the management of natural resources and assist local communities in problem solving through collaboration, learning together and collective action. Related research focuses on developing and testing the concepts, management principles, tools and policy options needed to help strengthen the application of adaptive collaborative management.

63. In recent years, application of adaptive collaborative management in various places has had positive impact, including: marginalized groups have been successfully integrated into formal forest management activities; the role and contributions of local communities in decision-making have been strengthened; negotiation and conflict management skills have been developed; information networks have been expanded; and monitoring skills have been strengthened. Concerted effort is needed, however, by policy and decision makers to further improve institutional arrangements at the local level and to strengthen collaborative processes in formal forest management.

Mobilizing resources for forest research on all aspects of sustainable forest management

64. The changes in funding structures, especially the decrease in public funding and the potential increase in private funding, underline the need to develop and/or adapt strategies that facilitate research related to all dimensions of sustainable forest management and sustainable development. Ways to attract private funding for research related to ecological and social benefits of forests and sustainable forest management especially need to be sought.

VII. Conclusions

65. Science has made significant contributions to enhancing knowledge about the issues addressed in the IPF/IFF proposals for action and has provided scientific input to the global deliberations on forests and forest-related issues, including biodiversity, climate change and overall sustainable development.

66. The mechanisms put in place at the international level have facilitated science-policy interaction and enabled mutual learning. However, linkages between science and policy are still weak in many countries. Strengthening science-policy interaction continues to be of high priority. It is crucial to support and expand participation, communication and networking capacities of national and subnational research organizations and individual scientists in particular in developing countries, and to provide opportunities and incentives for stronger engagement of scientists at the science-policy interface. An exchange of experiences gained and lessons learned in the formulation and implementation of national forest programmes that involve science could help to further advance adaptive and participatory policy planning processes.

67. The further development and increased availability of information and communication technologies have enabled more efficient dissemination of forest-related scientific information. However, the lack of information and communication technology infrastructure and insufficient related skills of forest research organizations, in developing countries in particular, are major constraints to providing access to forest-related information. Continued and enhanced efforts are needed to provide necessary information and communication technologies infrastructure, develop related skills and support networking activities.

68. Global and regional deliberations regarding forest biological diversity, climate change, forest law enforcement and governance and poverty eradication, and other cross-cutting forest-relevant issues have underlined the importance of integrated approaches and multidisciplinary research.

69. Existing weaknesses in communication and collaboration across disciplines and among organizations is a major constraint to the development of integrated approaches. There is a need for national research institutions, with regional and international assistance, to develop intra-institutional structures and processes and enhance their capacity for inter-institutional and multidisciplinary cooperation both within and between countries.

70. Recent trends in research funding require innovative strategies by forest research organizations concerning the allocation of funds both within countries and internationally. While the private sector offers funding opportunities in research areas that provide competitive advantages for potential investors, trends in public financing emphasize the contributions of forest research to broader sustainable development objectives. This reflects the high importance of promoting stronger integration of forest research with priority areas of sustainable development, in particular those where forest research activities can help to address the problems of local communities and poor forest-dependent people.

71. **The application of forest science to forest management planning has helped translate research results into practical application and has facilitated feedback to researchers from users of the research. Community-based research and development can narrow the gap between researchers and resource managers and help overcome the perceived "accountability gap" regarding the "on the ground impact" of forest research.**

VIII. Points for discussion

72. **The Forum may wish to consider the following points for discussion:**

(a) **Improve the linkages between science and policy by enhancing the capacities of national and subnational research organizations and individual scientists, in particular in developing countries, to participate in policy development processes, and by providing incentives for scientists' engagement at the science-policy interface;**

(b) **Request the Forum secretariat and other members of the Collaborative Partnership on Forests to facilitate joint actions to further improve linkages and to improve communication and networking between science, forest policy and civil society, including the promotion of global forest information services;**

(c) **Encourage international organizations and financing institutions to enhance the capacity of research organizations, in developing countries in particular, in generating and accessing forest-related data and information through information and communication technologies infrastructure, in strengthening the skills of researchers, and in supporting networking activities;**

(d) **Encourage States members of the Forum and international organizations to support and strengthen emerging regional forest research networks in capacity-building, regional cooperation, and articulating regional research agendas;**

(e) **Recommend that member States, together with international and regional organizations, institutions, processes and various stakeholders, recognize the contribution of forest research to the priority areas in support of sustainable forest management;**

(f) **Encourage international and regional organizations, institutions, processes and various stakeholders to promote and support interdisciplinary research both within and between national and international research organizations;**

(g) **Encourage member States and international organizations and financing institutions to increase public funding for research addressing environmental and social benefits of forests;**

(h) **Request Partnership members to support coordinated action by international and national forest research organizations in providing more policy-relevant and problem-oriented forest research responding to the diverse needs of stakeholders, to further increase interaction between the scientific community and other members of civil society and the private sector, and to**

further encourage the expansion of interdisciplinary research by means of increased networking and collaboration;

(i) **Encourage member States to consider establishment of a standing scientific body to advise the Forum and its member States on the scientific, technical and technological aspects of sustainable forest management. This body could also assist in the assessment of scientific, technical and technological factors affecting the implementation of the IPF/IFF proposals for action.**

Notes

[1] E/CN.18/UNFF/2001/Part II (see www.un.org/esa/forests/multi-year-work.html).

[2] For the texts, see www.un.org/esa/forests/pdf/ipf-iff-proposalsforaction.pdf.

[3] *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992*, vol. I, *Resolutions Adopted by the Conference* (United Nations publication, Sales No. E.93.I.8 and corrigendum), resolution 1, annex III (Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development for All Types of Forests).

[4] *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992*, vol. I, *Resolutions Adopted by the Conference* (United Nations publication, Sales No. E.93.I.8 and corrigendum), resolution 1, annex II.

[5] See E/CN.17/1997/12, paras. 4 (c) and 79-115.

[6] See www.biodiv.org/decisions/default.aspx?dec=VI/22.

[7] H. O. Kojwang, "Forest science and forest policy development: the challenges of Southern Africa", paper presented at the International IUFRO Workshop on the Forest Science/Policy Interface in Europe, Africa and the Middle East, Copenhagen, June 2003.

[8] M. Pregernig, "Linking knowledge and action: the role of science in national forest programmes processes", 2004 (to be published).

[9] "Forests and people, research that makes a difference", CIFOR, 2003.

[10] Declaration of Principles, Building the Information Society: a global challenge in the new Millennium document WSIS-03/GENEVA/DOC/4-E.

[11] www.gfis.net/.

[12] http://infofinder.cgiar.org.

[13] www.cabi-publishing.org (CABI), http://www.fao.org/agris (AGRIS) and http://www.iufro.org (DABIS).

[14] http://orton.catie.ac.cr.

[15] www.ec-gis.org/efis.

[16] M. J. Spilsbury, and others, "Forest-related Research Capacity in Eastern Africa: Burundi, Eritrea, Ethiopia, Kenya, Sudan, Tanzania and Uganda", 2004, FAO, CIFOR, African Evaluation Association research report.

[17] See www.fao.org/forestry/SOFO.

[18] www.uni-freiburg.de/waldbau/I-TOO/I-TOO-files/WP/I-TOO%20WP%2013.pdf.

[19] The Woods Hole Research Centre (www.whrc.org/science/tropfor/setfire.htm) and the Institute for Research on the Amazon (www.ipam.org.br).

[20] Summary of lessons learned through case studies at the International Workshop on "Forest Science and Forest Policy in the Asia-Pacific Region".

[21] M. J. Spilsbury, "Getting forestry research into policy and practice", proceedings of the International IUFRO Workshop on Forest Science and Forest Policy in the Asia-Pacific Region (see http://iufro.boku.ac.at/iufro/taskforce/tfscipol/chennai-papers/fspilsbury.pdf).

[22] www.iufro.org/iufro/spdc/nb-strategicplan.pdf.

[23] J. L. Garret and J. Islam, "Policy research and the policy process: do the twain ever meet?" International Institute for Environment and Development, Gatekeeper Series No. 74, 1978, London.

[24] M. J. Spilsbury and D. Kaimowitz (2000) "The influence of research and publications on conventional wisdom and policies affecting forests", Unasylva, 2003, www.fao.org/docrep/x8080e/x8080e02.htm.

[25] "Forests matter, early release", GEF, Washington, D.C., September 2003.

[26] For example, the Sixth Framework Programme of the European Commission for 2002-2006.

[27] Workshop on Forests for Poverty Reduction: the Changing Role of Research and Development Institutions, Dehra Dun, India, April 2003.